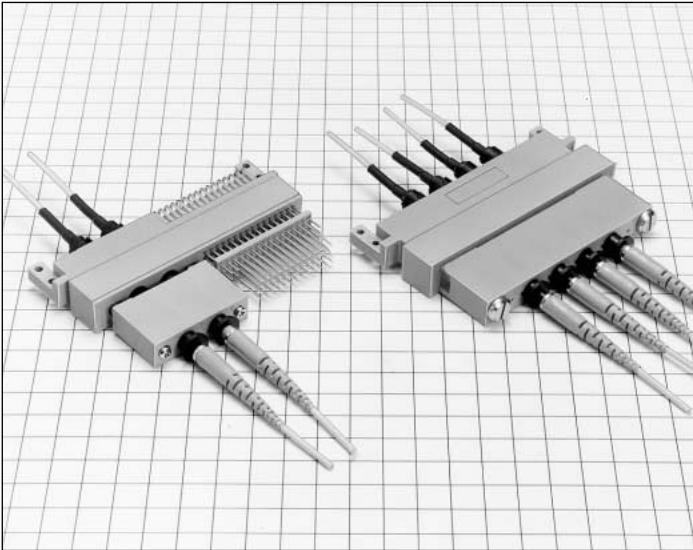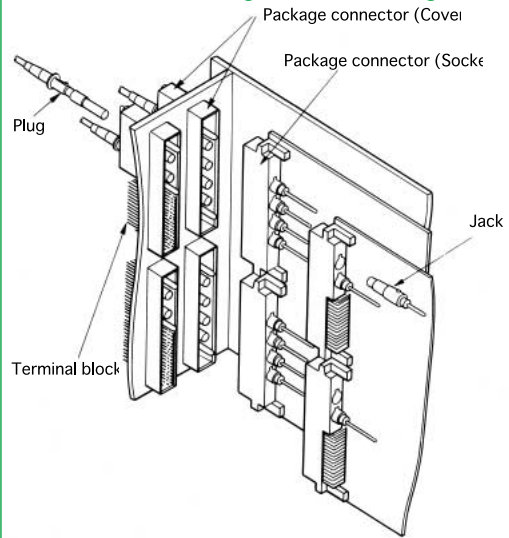# Plug-in D-type Optical Fiber Connectors for Terminal Equipment Mounting

HRPI Series

Connector Mounting Condition Diagram

Package connector (Cover)

Package connector (Socket)

Plug

Jack

Terminal block

■Features

1. Compliant with D-type Optical Fiber Connector Standards

These connectors are compliant with NTT D-type optical fiber connector standards.
JIS C 5980 (CF11-type optical fiber connectors)

2. Zirconia Ferrules

Zirconia ferrules that are the same shape as those of the HSC Series are used.

3. Housing

Optical terminals and coaxial terminals can be used in the same connector housing.
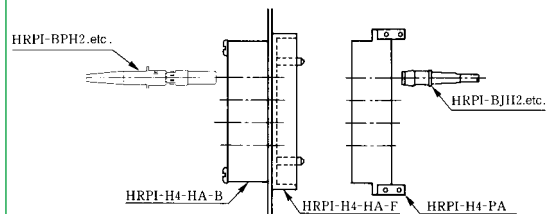
4. Removal of Optical Terminals

Removal from the optical terminal housing is performed with a slider operation from the back side in the case of the plug side, and by using a special tool from the font in the case of the jack side.
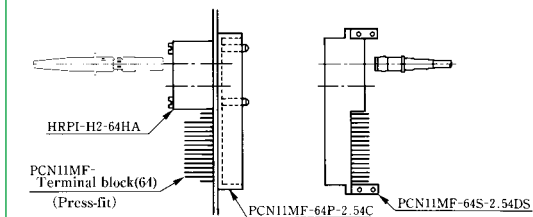
■Applications

Optical terminal equipment, optical relay racks, measuring instruments, etc.

Function Diagram (4-Fiber Housing)

HRPI-BPH2.etc.

HRPI-BJH2.etc.

HRPI-H4-HA-B

HRPI-H4-HA-F

HRPI-H4-PA

Function Diagram (Duplex Housing)

HRPI-H2-64HA

PCN11MF-Terminal block(64) (Press-fit)

PCN11MF-64P-2.54C

PCN11MF-64S-2.54DS

■Product Standards

Rating	Operating temperature range	−25℃∼70℃	Storage temperature range	−25℃∼70℃

Item			Test Method (JIS C 5961)	Standard
Optical Performance	Insertion loss	(SM)	1,300nm wavelength (LD)	0.5 dB or less (PC, AdPC)
		(GI)	1,300nm wavelength (LED)	0.3 dB or less (PC, AdPC)
	Reflection attenuation	(SM)	1,300nm wavelength (LD)	22 dB or greater (PC) 40 dB (AdPC)
		(GI)		22 dB or greater (PC)
Mechanical Performance	Split sleeve holding force of the adapter		ϕ2.499 ±0.0005mm zirconia gauge	Phosphor bronze 2 to 5.9 N Zirconia 2 to 3.9 N
	Cable clamp strength (Pulling in direction of axis)		98 N of pulling force between connector and cable for one minute (Bellcore TA-TSY-00326)	① Insertion loss fluctuation after test: 0.2dB or less ② No irregularity in clamp section or cable
	Repetitive operation		1,000 times	① Insertion loss fluctuation after test: 0.2 dB or less ② No damage, cracks, or part looseness
	Vibration resistance		Vibration range of 10 to 55 Hz Test in 3 directions, 2 hours each	
	Shock resistance		Acceleration of 981 m/s2, in 3 directions, 10 times each (Total of 30 times)	
Environmental performance	Humidity resistance (Temperature and humidity cycle)		Temperature −10℃ to 65℃, humidity 90 to 96% 10 cycles	
	Temperature cycle		Temperature −40 to 75℃ 42 cycles (Bellcore TA-NWT-00326)	
	Heat resistance		Leave for 960 hours at a temperature of 85℃	
	Cold resistance		Leave for 960 hours at a temperature of −25℃	
	Salt fog		Left in a 5% concentration of salt fog for 48 hours	No conspicuous corrosion

■Materials

| Part name	Material
Plug housing	Polybutylene terephthalate
Coil spring	Steel
Ferrule	Zirconia
Jack housing	Polybutylene terephthalate
Split sleeve	Copper alloy or zirconia
Housing	Polybutylene terephthalate

■Types

HRPI-type connector
- Back wiring board side connector housing
  - 4-Fiber front housing
  - 4-Fiber back housing
  - Duplex front housing
  - Duplex back housing
  - Terminal block (64 electrical contacts)
- Back wiring board side terminals
  - Optical terminals (Plug)
  - Coaxial terminals (Plug)
- Package side connector housing
  - Duplex housing (Including 64 electrical contacts)
  - 4-Fiber housing
- Package side terminals
  - Optical terminals (Jack)
  - Coaxial terminals (Jack)

HRS

■HRPI Connector Function Diagram

Duplex HousingDiagram

PCM11MF-64P-2.54C
PCN11MF-Terminal block (64)
HRPI-H2-64HA

4-Fiber Housing

HRPI-H4-PA

Optical Terminals

HRPI-BPH2-E1,E2
   -BPH2-B1-E,B2-E,
   -CPH2-E
   -CPH2-B1-E

Package connector (Cover)
(C-H4HA housing)

Package connector (Socket)
(C-H4PA housing)

Plug
(C-H3T type A plug and
   C-H3V type A plug)

Back wiring board side

Jack

Package side

(C-HZ-64HA housing)

Terminal block

Optical Terminals

HRPI-BJH2,BJH1,BJH2-D,BJH1-D

(C-HZ-64PA housing)

4.Fiber Housing

HRPI-H4-HA-F
HRPI-H4-HA-B

Duplex Housing

PCN11MF-64S-2.54DS

※ NTT product names are in parentheses (　)

■Back Wiring Board Side Connector Housing

●4-Fiber Front Housing
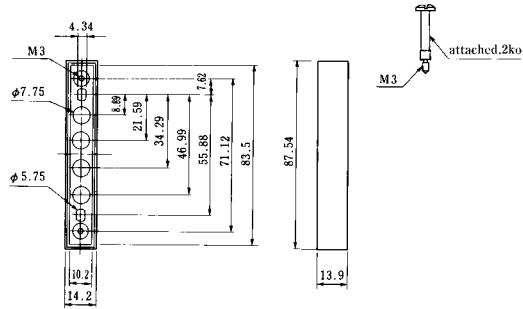
HRS No.	Product Number	Suitable Optical Terminals
CL707-0001-5	HRPI-H4-HA-F	HRPI-BPH2-E1, etc.

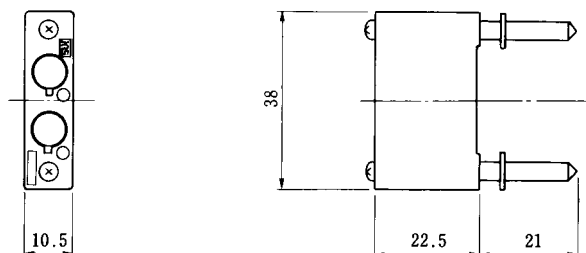(NOTE)The recommened clamp torque to be 58.8 N

●4-Fiber Back Housing
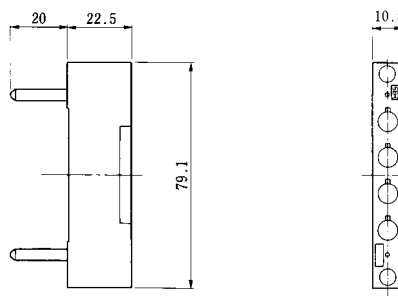
HRS No.	Product Number	Suitable Optical Terminals
CL707-0002-8	HRPI-H4-HA-B	HRPI-BPH2-E1, etc.

●Duplex Front Housing
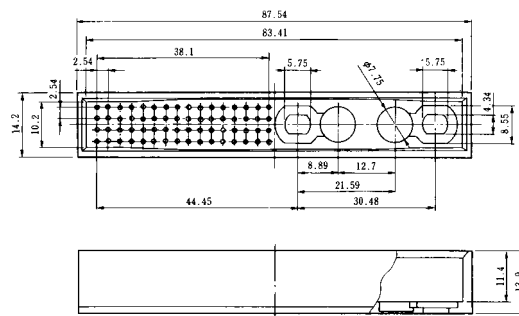
HRS No.	Product Number	Suitable Optical Terminals
CL583-1230-4	PCN11MF-64P-2.54C	HRPI-BPH2-E1, etc.

●Duplex Back Housing

HRS No.	Product Number	Suitable Optical Terminals
CL707-0004-3	HRPI-H2-64HA	HRPI-BPH2-E1, etc.

■Terminal Block
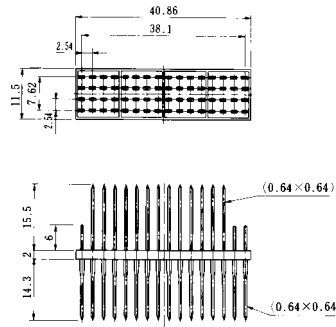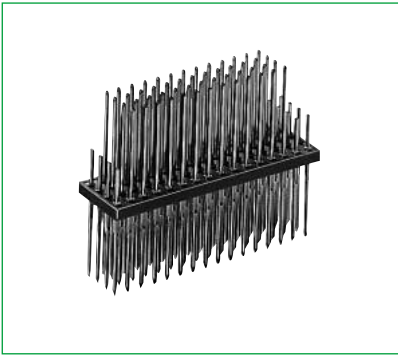
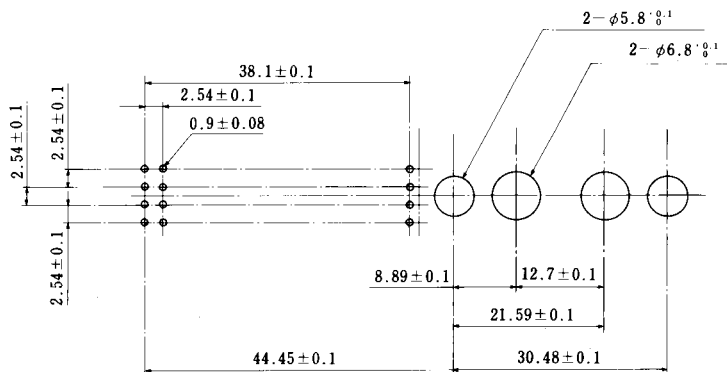| HRS No.	Product Number
CL583-1229-5	PCN11MF-Terminal Block (64)

◆Reference Mounting Dimensions Diagram
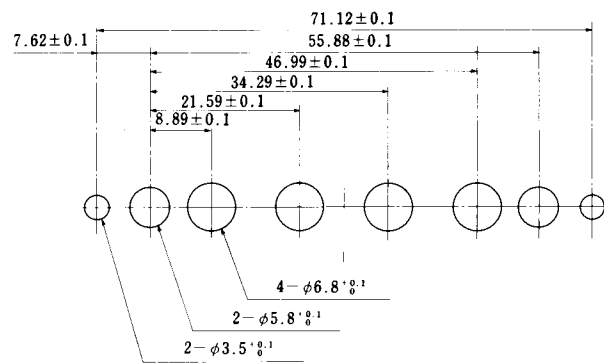
●HRPI-H4-HA-F
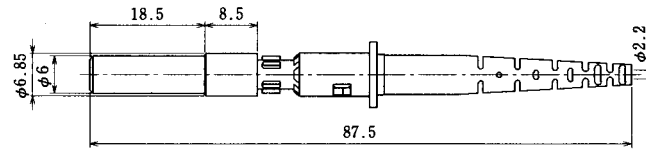●HRPI-H4-HA-B

●PCN11MF-64P-2.54C
●PCN11MF-Terminal Block (64)
●HRPI-H2-64HA

Note : Recommended panel thickness to be 2.4mm

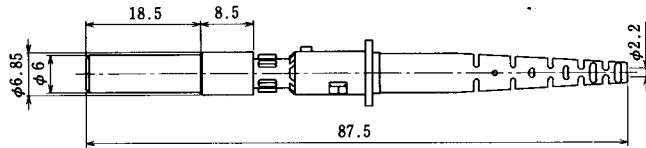# ■Back Wiring Board Side Plastic Type Optical Terminals

●Plug for Multimode Fiber Reinforced Cable Clamp

18.5 8.5

φ6.85 φ6 φ2.2

87.5

HRS No.	Product Number	Suitable Fiber	Suitable Cable Diameter	Color of Boot	Polishing Specification
CL707-0041-0	HRPI-CPH2-B1-E	GI-50/125	φ2mm	Blue	PC

●Plug for Single Mode Fibe Reinforced Cable Clamp

18.5 8.5

φ6.85 φ6 φ2.2

87.5

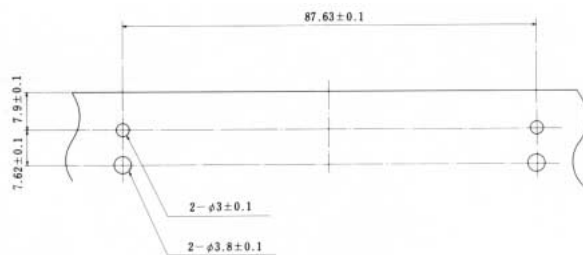| HRS No.	Product Number	Suitable Fiber	Suitable Cable Diameter	Color of Boot	Polishing Specification
CL707-0038-5	HRPI-BPH2-B1-E	SM-9.5/125	φ2mm	Blue	PC
CL707-0039-8	HRPI-BPH2-B2-E	SM-9.5/125	φ2mm	Light purple	AdPC

■Package Side Connector Housing

●4-Fiber Housing
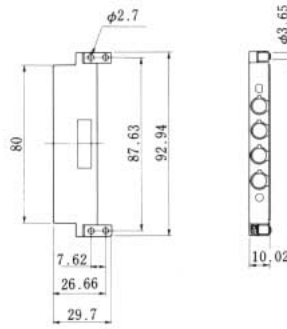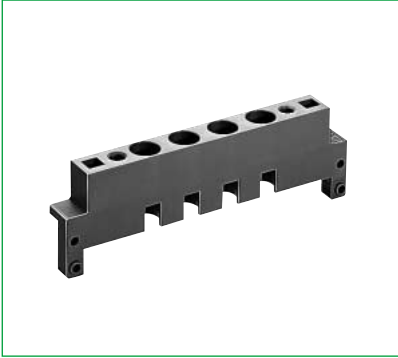
HRS No.	Product Number	Suitable Optical Terminals
CL707-0003-0	HRPI-H4-PA	HRPI-BJH2

●Duplex Housing

A - A SECTION
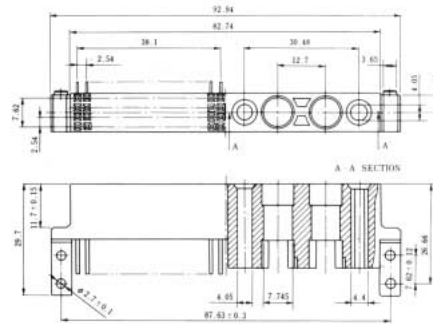
HRS No.	Product Number	Suitable Optical Terminals
CL583-1238-6	PCN11MF-64S-2.54DS	HRPI-BJH2

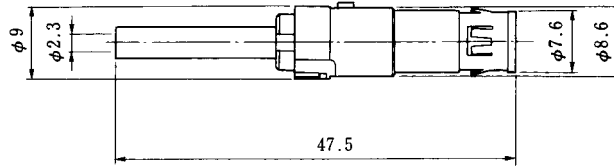# ◆Reference Mounting Dimensions Diagram

●HRPI-H4-PA
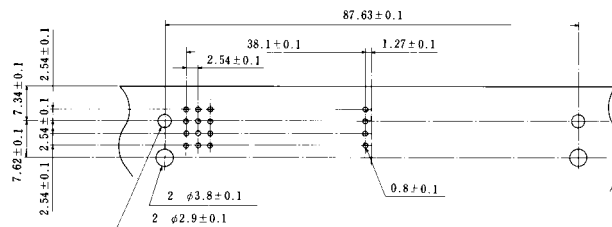
●PCN11MF-64S-2.54DS

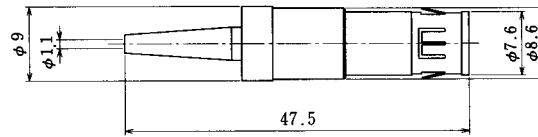Note : Recommended panel thickness to be 2.4mm

■Package Side Terminals

●Optical Terminals (Jack)

HRS No.	Product Number	Suitable Fiber	Suitable Cable	Split Sleeve Specification
CL707-0007-1	HRPI-BJH2	SM-9.5/125,GI-50/125	ϕ2mm	Copper alloy
CL707-0016-2	HRPI-BJH2-D	SM-9.5/125,GI-50/125	ϕ2mm	Zirconia

●Optical Terminals for Cable (Jack)

HRS No.	Product Number	Suitable Fiber	Suitable Cable	Split Sleeve Specification
CL707-0042-2	HRPI-BJH1	SM-9.5/125,GI-50/125	ϕ0.9mm	Copper alloy
CL707-0029-4	HRPI-BJH1-D	SM-9.5/125,GI-50/125	ϕ0.9mm	Zirconia

■Ferrules

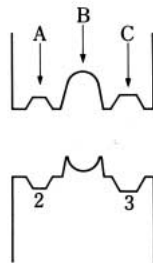Please use a zirconia ferrule that suits to the SC type optical fiber connector. (See page 28.)

■Tools
●Crimping Tool

HRS No.	Product Number	Suitable Connectors	Notes
CL704-0287-0	HSC-T3	HRPI-BPH2 HRPI-CPH2	Same as the SC tool

<Usage>

(1)Area "A" for 2mm dia · cable jacket crimping (indicated at "2")
   Area "C" for 3mm dia · cable jacket crimping (indicated at "3")
(2)Area "B" for Kevlar crimping

●Terminal Extraction Tool

HRS No.	Product Number	Suitable Connectors
CL350-0104-7	PO73-T-HPJRMV	HRPI-BJH2,PO73-J-2.5CV

Usage : Used when removing the HRPI-BJH2 from the package side housing. (See diagram below.)

1. Insert the PO73-T-HPJRMV, from which piston ② has already been retracted, into the package side housing (into which HRPI-BJH2 is mounted).
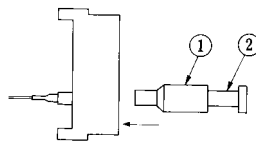
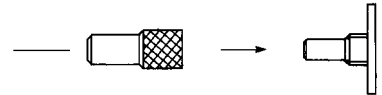2. Press piston ② while portion ① remains pressed into the package side housing.
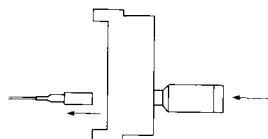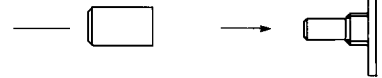
■Connectors for Measurement Applications

HRPI-R-L

HRPI-R-A

Usage : Attach the connector to a measuring instrument such as a sensor and use for making measurements such as optical power. (See diagram below.)
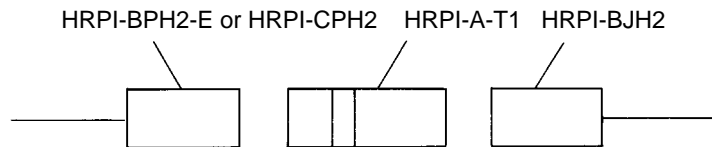
●For HRPI-BPH2-E, CPH2-E and other measurements

●For HRPI-BJH2

HRS No.	Product Number	Notes
——	HRPI-R-L	For main unit with lens attached, and optical power measurements
CL707-0043-5	HRPI-R-A	Plug and jack attachment

**Usage** : Used in performance measurements of wired plug-in connectors. (See diagram below.)

HRPI-BPH2-E or HRPI-CPH2   HRPI-A-T1   HRPI-BJH2

HRS No.	Product Number	Notes
CL707-0008-4	HRPI-A-T1	For loss measurements

NOTE: A special terminal extraction tool, PO73-T-HPJRMV (CL350-0104-7) is required when removing HRPI-BJH2 from HRPI-A-T1.

Usage : Used in the adjustment of the offset direction of the wired plug-in connector. (See diagram below.)

HRPI-BPH2   HRPI-A-T2   HRPI-BJH2
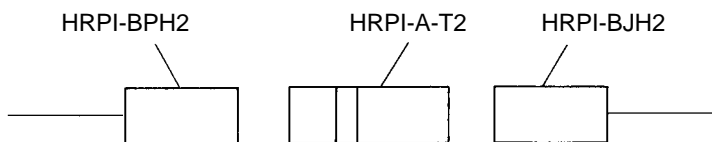
HRS No.	Product Number	Notes
CL707-0009-7	HRPI-A-T2	For adjustment of the offset direction

NOTE: A special terminal extraction tool, PO73-T-HPJRMV (CL350-0104-7) is required when removing HRPI-BJH2 from HRPI-A-T2.